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Filing Date	December 2, 2003
First Named Inventor	Don J. Nguyen
Art Unit	2161
Examiner Name	E. Leroux
Attorney Docket Number	42390.P6078C

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
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Signature	/Lawrence M. Mennemeier/		
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Date	December 5, 2008	Reg. No.	51,003

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Docket No.: 42390.P6078C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:
Don J. Nguyen
Application No. 10/727,231
Filed: December 2, 2003

For: A METHOD AND APPARATUS FOR BATTERY POWER PRE-CHECK AT SYSTEM POWER-ON

Examiner: E. Leroux

Art Unit: 2161

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on 12-5-2008 /Lawrence M. Mennemeier/

Date Lawrence M. Mennemeier

APPELLANT'S BRIEF UNDER 37 CFR § 41.37 IN SUPPORT OF APPELLANT'S APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Mail Stop Appeal Brief-Patents
Commissioner of Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant hereby submits this Brief in support of an appeal from a non-final decision of the Examiner, in the above-referenced case. Appellant respectfully requests consideration of this appeal by the Board of Patent Appeals and Interference for allowance of the above-referenced patent application.

TABLE OF CONTENTS

I. Real Party in Interest

The real party in interest in the present appeal is Intel Corporation of Santa Clara, California, the assignee of the present application.

II. Related Appeals and Interferences

There are no related appeals or interferences to appellant's knowledge that would have a bearing on any decision of the Board of Patent Appeals and Interferences.

III. Status of the Claims (independent claims shown in bold)

Claims **1**-3, 5-7 9-10, **15**-17, **18**-21 and 23 stand rejected under 35 USC § 102(e) as allegedly being anticipated by US Patent 6,167,289 (Ball).

Claim 4 stands rejected under 35 USC § 103(a) as allegedly being unpatentable over Ball in view of US Patent 4,639,657 (Frierdich).

Claim 11 stands rejected under 35 USC § 103(a) as allegedly being unpatentable over Ball.

Claims 8, 12-14 and 22 are objected to.

Non-final rejection of claims **1**-7, 9-11, **15**-17 and **18**-21 is being appealed.

IV. Status of Amendments

An amendment and response to a first Office Action mailed 5/23/2006 was submitted by appellant on 11/24/2006 and was entered. A Notice of Non-Compliant Amendment was mailed on 1/4/2007. Appellant submitted a corrected amendment and response on 5/4/2007, which was entered. A Final Office Action was mailed on 6/27/2007. A Notice of Appeal was transmitted on 12/27/2007, and an appeal brief was transmitted on 2/27/2008. A Non-final Office Action, reopening prosecution, was mailed on 4/29/2008. A second Notice of Appeal was transmitted on 10/29/2008, and an appeal ensued. Another amendment is being submitted, under 37 CFR § 41.33 and concurrent with the present appeal brief.

Accordingly, the claims stand as of the concurrently submitted amendment of 12/5/2008, and are reproduced in clean form in the Claims Appendix.

V. Summary of Claimed Subject Matter

Appellant's disclosure describes a system, apparatus and a method involving an electronic component and a battery check circuit. When an attempt is made to increase the power consumption level of the electronic component, the power supplied to the electronic component may or may not be changed, depending on a power (charge) level of a battery. The battery check circuit determines whether or not to provide increased power from the battery to the electronic component prior to applying power to the electronic component (a battery power pre-check) by comparing a power level of the battery to a predetermined power level. For example, it may be determined that there is insufficient power to safely power the electronic component when the power switch is actuated in an attempt to turn the system on. Since the battery power pre-check does not apply the requested increased power level from the battery to the electronic component until testing the battery power level, the pre-check may prevent a voltage that is too low and that could potentially harm the component from being applied to the component.

In some embodiments, the battery check circuit may be powered by a separate battery. In some embodiments, the battery check circuit may be disconnected from its power source after it has performed the battery power pre-check. Such disconnection may, for example, save power, as could be particularly useful for embodiments in which the battery power pre-check circuit is powered by a back-up battery.

Claim 1, for example, sets forth a system comprising: at least one electronic component[1]; a back-up battery[2,3] to provide a back-up voltage supply on a back-up supply

[1] "Unfortunately, failing batteries may cause problems for some electronic devices. For example, some electronic devices contain components which do not function properly when insufficient power is supplied." (p. 1, par. 4). "That is, the prior art does not test power levels of the batteries which would otherwise supply power to electronic components before such batteries are allowed to power such electronic components. Consequently, it would be possible for an improperly charged (i.e., overcharged or undercharged) battery to damage such components." (p. 1, par. 4). "The disclosed apparatus and method may advantageously protect components or data in a portable computer system or other battery powered electronic device." (p. 4, par. 2). "Figure 1 illustrates one embodiment of a system utilizing a battery check

node[3]; a battery check circuit to be powered by the back-up voltage supply[3,4] and to determine[4,5], in response to an attempt at system power-on[6], whether to provide power

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circuit 100. The system may be a laptop or notebook computer, a personal digital assistant, as well as any other type of portable electronic component which is capable of operating on battery power. The illustrated system includes a processor 140, a memory 150, and input/output (I/O) device(s) 160. The processor 140, the memory 150, and the I/O devices 160 receive power via one or more power supply line(s) 137, and transfer information over a bus 145. Many other types and/or combinations of components may be used in a system in combination with the battery check circuit 100." **(p. 5, par. 1; Fig. 1).**

[2] "In some embodiments, the battery check circuit 100 is powered by a back-up battery (not shown); however, in other embodiments the battery check circuit may be able to receive sufficient power from the battery 120." **(p. 6, par. 1; Fig. 1).** "In the embodiment of Figure 4, either AC adapter power on a supply line 402, DC power from the primary or secondary battery (not shown), or a back-up battery 408 may supply power during this initial start-up phase. When external AC power is available, that power not only supplies power for the system, but also recharges the back-up battery via a battery charger 406." **(p. 9, par. 1; Fig. 4, 408).**

[3] "The battery check circuit 300 is powered either by a back-up battery 305 via a supply line 307 or by power from an alternating current (AC) adapter input provided on a supply line 310." **(p. 7, par. 4; Fig. 3).** "A start-up circuit 325 receives power via the start-up supply line 322 and provides a back-up supply voltage on supply line 327." **(p. 8, par. 2; Fig. 3).** "A PWRGOOD signal on a signal line 366 controls a switch 328 and initially opens the switch 328, thereby only providing the back-up supply voltage to the battery check circuit 100 during system startup." **(p. 8, par. 3; Fig. 3).** "The back-up battery 408 is coupled via a supply line 409 and a diode 412 to a node 416." **(p. 9, par. 3; Fig. 4).**

[4] "The disclosed apparatus and method may advantageously protect components or data in a portable computer system or other battery powered electronic device. This protection involves the use of a battery check circuit which determines whether power from a battery should be applied to one or more components by testing a power level of the battery. In some embodiments, a back-up battery may be used to temporarily power the battery check circuit and/or system components while the test is performed." **(p. 4, par. 2).** "Thus, even if the primary battery or batteries have insufficient power, the battery check circuit and the Vccbk rail are powered by the backup battery." **(p. 10, par. 1; Fig. 4).**

[5] "For example, the battery check circuit 100 may determine whether the battery 120 has sufficient power to supply the processor 140 and other components with the proper voltage and/or current level." **(p. 6, lines 6-8).** "In general, the battery check circuit may perform any of a variety of tests which may determine whether the battery 120 may be safely applied to the components without jeopardizing either the components themselves, operation of other components, or any information stored in the system. If the battery 120 fails the test performed by the battery check circuit 100 in step 215, the battery check circuit 100 has determined that there is an unacceptably high risk of malfunction or damage and therefore the battery check circuit 100 does not connect the battery 120 to the system as shown in step 220." **(p. 6, lines 10-17).**

[6] "Many portable computing or other electronic devices are powered by batteries. Inevitably, unless charged, such batteries discharge and are no longer able to maintain operation of their host device. Users, however, often attempt to turn on their portable electronic devices either because they are unaware of the fact that the batteries are discharged or in an attempt to obtain additional operation from the failing batteries." **(p. 1, par. 3).** "Figure 5 illustrates one embodiment of a process performed at system power-on for a system such as one utilizing components in Figures 3 and 4." **(p. 3, par. 5; Fig. 5).** "The following description provides a method and apparatus for battery power pre-check at system power-on." **(p. 4, par. 1).** "The battery check circuit is coupled to an on/off switch 110. In a laptop computer this may be a push-button switch which, when temporarily depressed, indicates that the user wishes to power-on the system. In other embodiments, the power-on may be accomplished by other sensing or mechanical mechanisms. For example, opening the lid of a portable device may be used to signal that the device should be enabled. Alternatively, writing on a touch-pad or moving a mouse, or many other types of stimulus could be received by the battery check circuit 100 to signal system power-on." **(p. 5, par. 2; Fig. 1).** "When the on/off switch

from a battery[7] different than said back-up battery to the at least one electronic component by comparing the battery's power level to a predetermined power level[8].

Claim 7 sets forth a method comprising: powering, using a second battery, a battery check circuit[2,3,4,9] for testing a power level of a first battery[4,5,7,8,10] upon system startup regardless of a power state of the first battery[3,4]; testing whether the power level of the first battery is less than a first level[8] responsive to a stimulus that indicates application of power

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110 is depressed, a power latch 320 senses a momentary impulse from the on/off switch 110 as indicated in step 505 of Figure 5." **(p. 8, par. 2; Fig. 3).** "When an on/off switch 484 is depressed, a connection is made between node 416 and ground through a resistor 420 which is connected between node 416 and node 421. A P-channel transistor 424 having a source connected to node 416, a drain connected to a Vin terminal of a start-up regulator 430, and a gate connected to node 421. Due to the closing of the switch 484, the transistor 424 begins conducting due to the voltage drop across the resistor 420. Accordingly, the start-up regulator 430 receives the voltage supplied at node 416 and produces a voltage Vccbk at its output Vout which is connected to a supply line 432. Thus, even if the primary battery or batteries have insufficient power, the battery check circuit and the Vccbk rail are powered by the backup battery." **(p. 9, line 23 to p. 10, line 10; Fig. 4).** "Accordingly, when the switch 484 is released, the enabled transistor 482 keeps the gate of the transistor 424 at a low voltage level such that power from the back-up battery is latched as indicated in step 510." **(p. 10, lines 17-19; Figs. 4 & 5).**

[7] "If the battery 120 fails the test performed by the battery check circuit 100 in step 215, the battery check circuit 100 has determined that there is an unacceptably high risk of malfunction or damage and therefore the battery check circuit 100 does not connect the battery 120 to the system as shown in step 220." **(p. 6, par. 3; Figs. 1 & 2).** "If the battery check circuit 100 determines that sufficient power is available to safely operate the system in step 215, the switch 135 is closed and the battery is connected to power supply line(s) 137 enabling the main power supply as shown in step 225." **(p. 6, par. 4; Figs. 1 & 2).**

[8] "This protection involves the use of a battery check circuit which determines whether power from a battery should be applied to one or more components by testing a power level of the battery." **(p. 4, par. 2)** "For example, the battery check circuit 100 may determine whether the battery 120 has sufficient power to supply the processor 140 and other components with the proper voltage and/or current level." **(p. 6, par. 1)** "Referring back to Figure 3, after the power supply for the battery check circuit 300 is latched, a battery test circuit 330 sends signals over the control bus 335 effectuating a test of a primary battery 340 and/or the secondary battery 350 as indicated in step 520. In one embodiment, the battery test circuit 330 may be a part of a system management controller (SMC) and the control bus may be a System Management Bus (SMBus) which operates in accordance with the SMBus Specification mentioned in the background section of this disclosure. In this embodiment, the primary battery 340 and the secondary battery 350 are "smart batteries" which are capable of receiving and responding to commands such as power level testing commands over the control bus 335." **(p. 10, par. 3 to p. 11; Fig. 3).** "A voltage or power level value is returned to the battery test circuit 330 from one or both of the primary battery 340 and the secondary battery 350 and compared to a predetermined value to determine if the batteries have sufficient power to run the system at the new power level as indicated in step 525." **(p. 11, par. 1; Fig. 3).**

[9] "The power latch 320 latches a value such that power from the back-up battery 305 (and/or the primary battery 340 and the secondary battery 350 if sufficiently charged) is provided on a start-up supply line 322 as indicated in step 510." **(p. 8, par. 3; Figs. 3 & 5).**

[10] "As illustrated in step 210, the battery check circuit tests the primary battery or batteries." **(p. 6, par. 1; Fig. 2).**

is desired but before power is provided[6,11]; preventing the first battery from powering an electronic component if the power level is less than the first level[7,12]; and enabling circuitry to provide power from the first battery to the electronic component if the power level is at least the first level[7,13].

Claim 15 sets forth a method comprising: receiving an enabling signal[6,11]; latching power from a first battery responsive to the enabling signal[6,14]; powering a test circuit from the first battery via the latch circuit[6,8]; testing a charge level of a second battery via the test circuit[7,8]; and asserting a shutdown signal if the charge level is less than a predetermined charge level[8,15].

Claim 18 sets forth an apparatus comprising: a main battery[16]; the main battery having a charge status; a backup battery[2,3]; a plurality of system components[1]; a power switch[6]; and a battery check circuit[3,4] that is, in response to actuation of the power switch[6,11], powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery[3,4], the battery check circuit to determine[4,5] based on the charge status of the main battery whether to supply power from the main battery to the plurality of system components[5,7,8].

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[11] "When the on/off switch 110 is depressed, a power latch 320 senses a momentary impulse from the on/off switch 110 as indicated in step 505 of Figure 5." **(p. 8, par. 2; Fig. 5, 505).**

[12] "If insufficient power is available from both the primary battery 340 and the secondary battery 350, the battery check circuit 300 does not power up the system as indicated in step 530." **(p. 11, par. 2; Fig. 5, 530).** "In Figure 3, the battery check circuit 300 does not assert an ENABLE REGULATOR signal on the signal line 329. Thus, the detection of insufficient battery power prevents the entire system from operating and prevents power from the primary and secondary batteries from being provided to any system components." **(p. 12, par. 1).**

[13] "If the battery check circuit 100 determines that sufficient power is available to safely operate the system in step 215, the switch 135 is closed and the battery is connected to power supply line(s) 137 enabling the main power supply as shown in step 225." **(p. 6, par. 3; Fig. 2, 225).** "If either battery has sufficient power for the system, the battery check circuit 300 may assert the ENABLE REGULATOR signal on a signal line 329 as indicated in step 545." **(p. 12, par. 2; Fig. 5, 545).**

[14] "The power latch 320 latches a value such that power from the back-up battery 305 (and/or the primary battery 340 and the secondary battery 350 if sufficiently charged) is provided on a start-up supply line 322 as indicated in step 510." **(p. 8, par. 2; Fig. 5, 510).**

[15] "Referring to the detailed schematic of Figure 4, in response to the insufficient power being available, the SMC 330 asserts a START-UP SHUTDOWN signal on a signal line 460 as shown in step 535." **(p. 11, par. 2; Fig. 5, 535).**

[16] "primary battery 340" **(p. 8, par. 2; Fig. 3).**

Claim 4 sets forth the system of claim 1 wherein the battery check circuit comprises a latch which is set to a first state in response to the system being turned on to provide power exclusively from the back-up supply node when the system is turned on[6,11,14].

Claim 11 sets forth the method of claim 7 wherein powering the battery check circuit comprises: sensing an on button being depressed[6,11]; enabling power to the battery check circuit[6,8,14]; maintaining power to the battery check circuit while the power level of the first battery is tested[3,4,6].

VI. Grounds of Rejection to be Reviewed on Appeal

A. Claims 1-3, 5-7 9-10, 15-17, 18-21 and 23 stand rejected under 35 USC § 102(e) as allegedly being anticipated by US Patent 6,167,289 (Ball).

B. Claims 4 and 11 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Ball in view of US Patent 4,639,657 (Frierdich), and over Ball, respectively.

VII. Argument

A. 35 U.S.C. § 102(e) REJECTIONS

Claims 1-3, 5-7 9-10, 15-17, 18-21 and 23 stand rejected under 35 USC § 102(e) as allegedly being anticipated by US Patent 6,167,289 (Ball).

1. Claims 1 and 3 Are Not Anticipated.

Appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 1 sets forth:

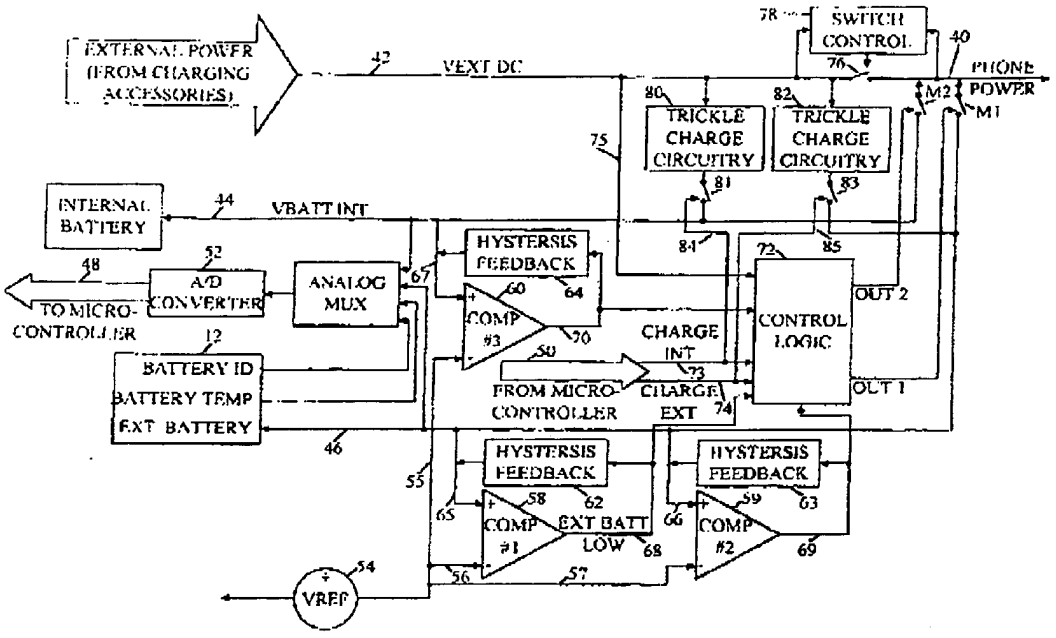
1. A system comprising:
at least one electronic component;
a back-up battery to provide a back-up voltage supply on a back-up supply node;
a battery check circuit to be powered by the back-up voltage supply and to determine, in response to an attempt at system power-on, whether to provide power from a battery different than said back-up battery to the at least one electronic component by comparing the battery's power level to a predetermined power level.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball.

Ball discloses in the abstract that that:

A portable phone has an internal battery and an external battery pack is releasably attachable to the phone. A control unit in the phone controls connection of the respective batteries to a phone power input, depending on the detection of the external battery voltage. Whenever an external battery is present with a voltage above a predetermined minimum value, the external battery will be connected to the phone power input to provide power to operate the phone, so that the internal battery lifetime is extended. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone, if the phone is on or during a call.

Fig. 1 of Ball is shown below:



Ball discloses in col. 1, lines 60-65 that:

...the external battery provides power at all times when present and when the battery voltage is at or above the minimum value. If the external battery voltage falls low, the system automatically switches to internal battery power, so that a stable power source is guaranteed at all times.

Ball discloses in col. 9, lines 30-45 that:

The control circuit and software illustrated in FIGS. 1 and 2 and Tables 1 to 3 above automatically controls power supply to the phone circuitry and also controls charging of both the internal and external batteries. The software is designed to always provide power from the external battery when present, if it has a sufficiently high voltage and if no external power is present on line 40. If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery. This enables users to swap one external battery pack for a new battery pack, even when the phone is switched on or during a call, without loss of signal. The software is also designed to always charge the internal battery first, and to trickle charge when necessary, followed by fast charge when the battery voltage is high enough. This reduces charging time.

Ball does not disclose or suggest a battery check circuit powered by a back-up voltage supply to determine, in response to an attempt at system power-on, whether to provide power from a battery different than said back-up battery. Ball discloses instead automatically switching between the two batteries and external DC power without interrupting power supply to the phone when the phone is on or during a call. (Abstract)

The Examiner suggests that the internal battery (Fig. 1, 44) is the backup battery.

But, appellant respectfully submits that even taking the internal battery as the claimed backup battery, Ball fails to show the identical invention in as complete detail as is set forth in claim 1. See *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Ball discloses that, "If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery." (col. 9, lines 38-41) Thus a battery check circuit is not powered by the back-up voltage supply to determine, in response to an attempt at system power-on, whether to provide power from the external battery, but rather is switched to the internal battery once the determination has been made that the external battery has been removed or is too low a voltage.

Therefore Appellant respectfully submits that in the cited reference, "a battery check circuit to be powered by the back-up voltage supply and to determine, in response to an attempt at system power-on, whether to provide power from a battery different than said back-up battery... ," as set forth in claim 1 are not found, either expressly or inherently described in as complete detail as is set forth in the claim.

2. Claims 2, 7 and 9-10 Are Not Anticipated.

As presented above, in determining the scope and content of the cited references with regard to the instant claims at issue, appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 7, as amended, sets forth:

> 7. A method comprising:
> powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup regardless of a power state of the first battery;
> testing whether the power level of the first battery is less than a first level responsive to a stimulus that indicates application of power is desired but before power is provided;
> preventing the first battery from powering an electronic component if the power level is less than the first level; and
> enabling circuitry to provide power from the first battery to the electronic component if the power level is at least the first level.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball, which were quoted above.

Ball does not disclose or suggest powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup or in response to a

stimulus that indicates application of power is desired but before power is provided, regardless of a power state of the first battery. Again, appellant respectfully submits that Ball discloses instead automatically switching between the batteries when the phone is on or during a call.

Ball discloses that, "If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery." (col. 9, lines 38-41) Thus a battery check circuit is not powered by the second battery regardless of a power state of the first battery, but rather is switched to the internal battery if the external battery is detected to be removed or at too low a voltage. Ball discloses that, "the external battery provides power at all times when present and when the battery voltage is at or above the minimum value." (col. 1, lines 60-62)

The claimed: testing whether the power level of the external battery is less than a first level responsive to a stimulus that indicates application of power is desired but before power is provided, and/or using the internal battery upon system startup regardless of a power state of the external battery, are not disclosed or suggested by Ball.

Therefore appellant respectfully submits that in the cited reference, "powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup" or "responsive to a stimulus that indicates application of power is desired but before power is provided," and/or "regardless of a power state of the first battery," as set forth in claim 7 are not found, either expressly or inherently described in as complete detail as is set forth in the claim.

3. Claims 5-6 and 15-17 Are Not Anticipated.

As presented above, in determining the scope and content of the cited references with regard to the instant claims at issue, appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 15, as amended, sets forth:

> 15. A method comprising:
> receiving an enabling signal;
> latching power from a first battery responsive to the enabling signal;
> powering a test circuit from the first battery via the latch circuit;
> testing a charge level of a second battery via the test circuit; and
> asserting a shutdown signal if the charge level is less than a predetermined charge level.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball, which were quoted above.

Appellant respectfully submits that Ball does not disclose or suggest latching power from a first battery responsive to the enabling signal and powering a test circuit via the latch circuit to test a charge level of a second battery, as set forth in Claim 15. In fact, the word latch does not occur at all in the disclosure of Ball.

Further Ball does not disclose or suggest a latch which is set to a first state in response to the system being turned on to provide power exclusively from the back-up supply node when the system is turned on, as set forth in Claim 4, from which both claims 5 and 6 depend. Accordingly, with regard to claims 5 and 6, appellant respectfully submits that the Examiner is in error for asserting that claims 5 and 6 can be anticipated by Ball, when claim 4 is not.

Additionally, appellant respectfully submits that Ball does not disclose or suggest asserting a shutdown signal if the charge level is less than a predetermined charge level. Instead Ball discloses that, "If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery." (col. 9, lines 38-41) Thus a shutdown signal is not asserted if the charge level of the external battery is less than a predetermined charge level, but rather the unit is automatically switched to the internal battery without interrupting power supply to the phone (Abstract, lines 9-13).

Therefore appellant respectfully submits that in the cited reference, "latching power from a first battery responsive to the enabling signal" and "powering a test circuit... via the latch circuit" to test "a charge level of a second battery," and/or "asserting a shutdown signal if the charge level [of a second battery] is less than a predetermined charge level," as set forth in claim 15 are not found, either expressly or inherently described in as complete detail as is set forth in the claim.

4. Claims 18-21 Are Not Anticipated.

As presented above, in determining the scope and content of the cited references with regard to the instant claims at issue, appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 18, as amended, sets forth:

> 18. An apparatus comprising:
> a main battery, the main battery having a charge status;
> a backup battery;
> a plurality of system components;
> a power switch; and
> a battery check circuit that is, in response to actuation of the power switch, powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery, the battery check circuit to determine based on the charge status of the main battery whether to supply power from the main battery to the plurality of system components.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball, which were quoted above.

Ball does not disclose or suggest a power switch and a battery check circuit that, in response to actuation of the power switch is powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery, the

battery check circuit to determine whether to supply power from the main battery to the system components based on the charge status of the main battery, as set forth in Claim 18. Again, appellant respectfully submits that Ball discloses instead automatically switching between the batteries when the phone is on or during a call.

Ball discloses that, "If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery." (col. 9, lines 38-41) Thus a battery check circuit is not powered during the battery test interval exclusively by the backup battery regardless of the charge status of the main battery, but rather is switched to the internal battery if the external battery is detected to be removed or at too low a voltage. Ball discloses that, "the external battery provides power at all times when present and when the battery voltage is at or above the minimum value." (col. 1, lines 60-62)

Therefore appellant respectfully submits that in the cited reference, "a battery check circuit that is, in response to actuation of the power switch, powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery, the battery check circuit to determine based on the charge status of the main battery whether to supply power from the main battery... ," as set forth in claim 18 is not found, either expressly or inherently described in as complete detail as is set forth in the claim.

B. 35 U.S.C. § 103(a) REJECTIONS

Claim 4 stands rejected under 35 USC § 103(a) as allegedly being unpatentable over Ball in view of US Patent 4,639,657 (Frierdich).

1. Claim 4 Is Not Obvious.

First, in determining the scope and content of the cited references with regard to the instant claims at issue, appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 1 sets forth:

1. A system comprising:
at least one electronic component;
a back-up battery to provide a back-up voltage supply on a back-up supply node;
a battery check circuit to be powered by the back-up voltage supply and to determine, in response to an attempt at system power-on, whether to provide power from a battery different than said back-up battery to the at least one electronic component by comparing the battery's power level to a predetermined power level.

Further, Claim 4 sets forth:

4. The system of claim 1 wherein the battery check circuit comprises:
a latch which is set to a first state in response to the system being turned on to provide power exclusively from the back-up supply node when the system is turned on.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball, which were quoted above.

Appellant respectfully submits that Ball does not disclose or suggest a latch which is set to a first state in response to the system being turned on to provide power exclusively from the back-up supply node when the system is turned on, as set forth in Claim 4.

Frierdich is directed to controlling the alternating current (A.C.) output voltage of an electrical power generating system including a generator having a winding, the direct current (D.C.) energization of which influences the A.C. output voltage. In particular, Frierdich is directed to controlling the energization of the winding in controlling the A.C. output voltage (col. 1, lines 6-13). It is the backup battery for startup of the generator of Frierdich, that the Examiner alleges can obviously be combined to modify Ball and to arrive at the subject matter set forth in Claim 4.

With regard to Claim 4, the Office Action of April 29, 2008 cites Fig. 1, 51; col. 6, lines 25-27, which disclose that:

> A backup battery 51 for startup purposes is connected across winding 15 by normally-open switch 53 and a blocking diode 55.

The Office Action of April 29, 2008states that it would have been obvious to modify Ball to include above limitation(s) based on the teachings of Frierdich for providing a reliable power source for startup (power-on) because the normal power is not available during startup (power-on).

Next, appellant respectfully points out some of the differences between the cited references and the instant claims at issue. Appellant respectfully submits that Frierdich does not disclose or suggest making a determination in response to an attempt at system power-on, but rather using the backup battery during startup of a generator to provide a regulating voltage that would be unavailable until the generator is running, then it switches to the D.C. regulating voltage supplied by field windings 15 (col. 3, lines 53-59).

Appellant respectfully submits that the Examiner is in error for suggesting that one of ordinary skill in the art (not the inventive skill of Ball) would combine the backup battery during startup with Ball's technique of automatically switching between two batteries and external DC power when a phone is switched on or during a call, and further in error for suggesting that such a combination would arrive at the claimed battery check circuit powered by a back-up voltage supply to determine, in response to an attempt at system power-on, whether to provide power from the primary battery.

In fact, Frierdich's invention, filed in August of 1984 (issued January 1987), is not really directed to using the backup battery for startup of the generator, and thus indicates that such practice was already conventional, and so available to Ball long before his filing date of February 1998. What Frierdich discloses is switching from the backup battery 51 to the D.C. regulating voltage supplied by field windings 15 when that regulating voltage becomes available through normal operation of generator 11, not determining whether or not, to provide power from a battery different than said back-up battery.

Further more Ball, having inventive skill not just ordinary skill in the art, does not disclose or suggest a latch being set in response to the system being turned on to provide power exclusively from the back-up supply node to power a battery check circuit to

determine whether to provide power from a battery different than said back-up battery, which the Examiner asserts is obvious. Ball discloses instead only automatically switching between the two batteries and external DC power when the phone is on or during a call.

Therefore, appellant respectfully submits that the Examiner is in error for incorrectly reasoning that something that did not obviously occur to Ball, having inventive skill not just ordinary skill in the art, by February 1998, would obviously occur to one of ordinary skill by September 1998, the priority date of the present application, without some suggestion to modify the cited reference(s). Appellant respectfully submits that such incorrect reasoning is evidence of impermissible hindsight being used to arrive at the instant claimed subject matter.

Accordingly in light of the above arguments, appellant respectfully submits that Claim 4 is not obvious in view of the cited references.

Claim 11 stands rejected under 35 USC § 103(a) as allegedly being unpatentable over Ball.

2. Claim 11 Is Not Obvious.

As presented above, in determining the scope and content of the cited references, appellant respectfully submits that Ball is directed to a control unit in a phone that controls connection of the respective batteries to the phone power input. When the external battery voltage falls below the minimum value, or the external battery is removed, the unit automatically switches to internal battery power, so that the external battery can be changed without interrupting power supply to the phone. This enables users to swap one external battery pack for a new battery pack, even when the phone is on or during a call, without loss of signal. (Abstract; col. 2, lines 34-35)

On the other hand, Claim 7 sets forth:

> 7. A method comprising:
> powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup regardless of a power state of the first battery;
> testing whether the power level of the first battery is less than a first level responsive to a stimulus that indicates application of power is desired but before power is provided;
> preventing the first battery from powering an electronic component if the power level is less than the first level; and
> enabling circuitry to provide power from the first battery to the electronic component if the power level is at least the first level.

Further, Claim 11 sets forth:

> 11. The method of claim 7 wherein powering the battery check circuit comprises:
> sensing an on button being depressed;
> enabling power to the battery check circuit;
> maintaining power to the battery check circuit while the power level of the first battery is tested.

The Examiner indicates that subject matter of Claims 1, 7, 9, 15, 17 and 18 is disclosed by the material in Fig. 1, 40 and 44; col. 1, lines 60-65; col. 9, lines 35-40 and the abstract of Ball, which were quoted above.

Ball does not disclose or suggest an on button and powering a battery check circuit that comprises sensing of the on button being depressed (as set forth in Claim 11) said powering of the battery check circuit, using a second battery, for testing a power level of a first battery upon system startup regardless of a power state of the first battery (as set forth in Claim 7, from which Claim 11 depends).

Ball discloses that, "If the external battery is detected to be removed or at too low a voltage, the software is arranged to automatically switch to the internal battery." (col. 9, lines 38-41) Thus a battery check circuit is not powered by the second battery regardless of a power state of the first battery, but rather is switched to the internal battery if the external battery is detected to be removed or at too low a voltage.

Ball discloses that, "the external battery provides power at all times when present and when the battery voltage is at or above the minimum value." (col. 1, lines 60-62; emphasis added) Therefore, Ball does not disclose or suggest that powering a battery check circuit comprises sensing of the on button being depressed, and further, Ball teaches away from powering of the battery check circuit, using the internal battery, regardless of a power state of the external battery, for testing the level of the external battery upon system startup.

Accordingly in light of the above arguments, appellant respectfully submits that Claim 11 is not obvious in view of the cited reference.

Conclusion

Appellant submits that all claims now pending are in condition for allowance. Such action is earnestly solicited at the earliest possible date. If there is a deficiency in fees, please charge our Deposit Acct. No. 50-0221.

Respectfully submitted,

Date: December 5, 2008

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VIII. Claims Appendix: Claims Involved in Appeal (Clean Copy)

1. (Previously Presented) A system comprising:

at least one electronic component;

a back-up battery to provide a back-up voltage supply on a back-up supply node;

a battery check circuit to be powered by the back-up voltage supply and to determine, in response to an attempt at system power-on, whether to provide power from a battery different than said back-up battery to the at least one electronic component by comparing the battery's power level to a predetermined power level.

2. (Original) The system of claim 1 wherein the battery check circuit provides power from the battery to the at least one electronic component if the battery power level is at least the predetermined power level and wherein the battery check circuit prevents the battery from providing power to the at least one electronic component if the battery power level is less than the predetermined power level.

3. (Original) The system of claim 1 wherein the predetermined power level is based on a voltage or power requirement of one or more of the at least one electronic component.

4. (Previously Presented) The system of claim 1 wherein the battery check circuit comprises:

a latch which is set to a first state in response to the system being turned on to provide power exclusively from the back-up supply node when the system is turned on.

5. (Original) The system of claim 4 wherein the latch which is reset to a second state when a signal indicating availability to the at least one electronic component of power from the battery is received by the latch, the battery check circuit disconnecting the back-up supply node from the battery check circuit when the latch is in a second state.

6. (Original) The system of claim 4 wherein power from the back-up battery is supplied to the at least one electronic component while the latch is in the first state, and wherein power from the back-up battery is disconnected from the at least one electronic component when the latch is in a second state.

7. (Original) A method comprising:

powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup regardless of a power state of the first battery;

testing whether the power level of the first battery is less than a first level responsive to a stimulus that indicates application of power is desired but before power is provided;

preventing the first battery from powering an electronic component if the power level is less than the first level; and

enabling circuitry to provide power from the first battery to the electronic component if the power level is at least the first level.

8. (Original) The method of claim 7 further comprising:

latching power from the second battery upon receiving said stimulus that indicates application of power is desired; and

asserting a system shutdown signal prior to allowing power from the first battery to be applied to the electronic component.

9. (Original) The method of claim 7 wherein the first level is based on a safe voltage supply range for the electronic component.

10. (Original) The method of claim 7 further comprising:

disconnecting power provided by the second battery from the battery check circuit after testing the power level of the first battery.

11. (Original) The method of claim 7 wherein powering the battery check circuit comprises:

sensing an on button being depressed;

enabling power to the battery check circuit;

maintaining power to the battery check circuit while the power level of the first battery is tested.

12. (Previously Presented) A method comprising:

powering, using a second battery, a battery check circuit for testing a power level of a first battery upon system startup regardless of a power state of the first battery, said powering the battery check circuit comprising:

sensing an on button being depressed,

enabling power to the battery check circuit, and

maintaining power to the battery check circuit while the power level of the first battery is tested, wherein maintaining power to the battery check circuit comprises setting a latch which has its output coupled to enable a gate connecting the battery check circuit to the second battery;

testing whether the power level of the first battery is less than a first level responsive to a stimulus that indicates application of power is desired but before power is provided;

preventing the first battery from powering an electronic component if the power level is less than the first level; and

enabling circuitry to provide power from the first battery to the electronic component if the power level is at least the first level.

13. (Original) The method of claim 12 wherein preventing the first battery from powering the electronic component comprises:

maintaining the electronic component in a disconnected state from the first

battery; and

disabling the battery check circuit.

14. (Original) The method of claim 13 wherein disabling the battery check circuit comprises resetting the latch to disconnect the battery check circuit from the second battery.

15. (Original) A method comprising:

receiving an enabling signal;

latching power from a first battery responsive to the enabling signal;

powering a test circuit from the first battery via the latch circuit;

testing a charge level of a second battery via the test circuit; and

asserting a shutdown signal if the charge level is less than a predetermined charge level.

16. (Original) The method of claim 15 further comprising:

asserting a power supply enabling signal if the charge level is greater than or equal to the predetermined charge level.

17. (Original) The method of claim 15 further comprising:

disconnecting the test circuit power from the first battery if the second battery has insufficient remaining power.

18. (Original) An apparatus comprising:

a main battery, the main battery having a charge status;

a backup battery;

a plurality of system components;

a power switch; and

a battery check circuit that is, in response to actuation of the power switch, powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery, the battery check circuit to determine based on the charge status of the main battery whether to supply power from the main battery to the plurality of system components.

19. (Original) The apparatus of claim 18 wherein said apparatus is a portable computing device and wherein said plurality of system components includes a processor.

20. (Original) The apparatus of claim 18 further comprising a voltage regulator, wherein the battery check circuit enables the voltage regulator if the charge status of the main battery is at least a predetermined charge level.

21. (Original) The apparatus of claim 18 wherein the battery check circuit is to assert a power supply enabling signal if the charge status is greater than or equal to a predetermined charge level.

22. (Previously Presented) An apparatus comprising:

a main battery, the main battery having a charge status;

a backup battery;

a plurality of system components;

a power switch; and

a battery check circuit that is, in response to actuation of the power switch, powered during a battery test interval exclusively by the backup battery, regardless of the charge status of the main battery, the battery check circuit to determine based on the charge status of the main battery whether to supply power from the main battery to the plurality of system components, wherein the battery check circuit is to assert a power supply enabling signal if the charge status is greater than or equal to a predetermined charge level and otherwise to assert a shutdown signal prior to supplying power from the main battery to the plurality of system components.

23. (Original) The apparatus of claim 22 wherein the battery check circuit is to reset a latch to disconnect the battery check circuit and the backup battery if the main battery has insufficient remaining power.

IX. Evidence Appendix: Copies of Evidence Relied Upon by Appellant

The references cited by the Examiner are:

US Patent 6,167,289 (Ball), and

US Patent 4,639,657 (Frierdich).

Exhibit A

No additional evidence is relied upon by appellant.

X. Related Proceedings Appendix: Copies of Decisions Rendered by a Court or the Board in any Prior and Pending Appeals, Interferences or Judicial Proceedings

There are no related appeals or interferences to appellant's knowledge that would have a bearing on any decision of the Board of Patent Appeals and Interferences.